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EMO

Senior Officers' Briefing
The Civil Defense Discourse
Charles Pfizer Award to Dr. Massey
The Social and Psychological Effects of Nuclear Attack
Civil Defence
Index — 1966

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In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Director General: C. R. PATTERSON *Editor:* B. L. PERRIER

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1967

SENIOR OFFICERS' BRIEFING
on
Civil Emergency Planning

Three of the main speakers at the Senior Officers' Briefing on Civil Emergency Planning, held recently at the Canadian Emergency Measures College, Arnprior, Ontario, had their summaries published in the December 1966 edition of the Digest. Following are the summaries by Dr. Horace Beach, Dalhousie University, Dr. G. Lindsey, Defence Research Board and Mr. Melvin Conant, Standard Oil Company, New York. Mr. C. R. Patterson, Director General, Canada EMO, then briefed the conference with a realistic appraisal of emergency measures planning in Canada: his address, also published in this edition, concludes our report on the Senior Officers' Briefing.

The Management of Human Behaviour in Disaster

by

Dr. Horace Beach,
Dalhousie University

The overriding conditions which make human behaviour understandable and predictable in disaster are space and time.

Disaster space has been divided into five zones:

(a) total impact area;
(b) fringe impact area;
(c) filter area;
(d) organized community aid area;
(e) organized regional aid area.

The fringe area is close to that of total impact, but usually has suffered only minor damage and few or no casualties. From the filter area come help and services, and through it go traffic and information from the impact area to outside. The organized community aid area is not directly affected, but is the first source of organized help and services such as police and fire departments. The organized regional aid area constitutes the main source of help for recovery and reconstruction.

The behaviour of people differs according to where they are at the time of the disaster. Those in the impact area suffer at least momentary shock and the collapse of organized behaviour. In the fringe impact area persons may suffer a little shock but many individuals will go into the impact area to help.

In natural disaster the area of total impact is the focus of interest, communications and activity. It becomes the centre of a massive and disorganized movement of people and supplies. This phenomenon of convergence presents a formidable problem in most natural disasters.

Time Factors

Events can be distinguished in three definite time phases:

(a) the warning phase which can be divided into:
  (i) early warning or alert phase;
  (ii) late warning phase;
(b) the impact period;
(c) the emergency phase which continues until the dead have been removed, injured cared for and such things as fire dealt with. This divides into:
  (i) the isolation phase;
  (ii) the assistance phase.

Human Responses to Warning

The warning period is of crucial importance. People's response to early and late warning differs in the degree of apprehension and in the kind of action. Late warnings may invoke immediate protective action. Warning signals are interpreted in the light of an individual's past experience. Those which have most effect are those which in the past have been followed by a validating event.

Because of this, practice alerts should be held invariably at the same hour on the same day of the week, so that people get used to this, and at other times would regard the alert as indicating the possibility of serious danger.

An individual may interpret warning in the light of his belief or disbelief in the likelihood of the event concerned. His responses to warning will also be affected by his membership and presence in an organization which is responsive. For instance, an office worker or a policeman may seek validation from his superiors and then respond to the warning with protective behaviour.

Interpretation of warning is also affected by the location of family members and peer groups. When an individual feels that his family may be in danger somewhere else, he will respond to warning more than when he is with his family.

Reaction to warning is also affected by credibility of the source and the availability of protective measures.

In summary, the following measures would greatly increase the effectiveness of warnings:

(a) reliable experience of practice alerts;
(b) provision of confirming warning signals;
(c) organizational control of behaviour in terms of leadership and training;
(d) development and use of credible sources of warning messages;
(e) inclusion in warning messages of explicit information about available protective measures.

Human Responses in the Emergency

Typical reaction to the impact of disaster is momentary cessation of behaviour, followed by much activity on an individual basis. In the fringe areas, helpers tend to get caught up in immediate situations, and do not contribute much to control and organization in the early period. When professional and organized emergency services arrive they meet many problems and hindrances such as blocked traffic routes and communication lines down, and lack of relevant and accurate information. On occasion, organized groups have operated independently just as individuals do. It is necessary to get overall direction and co-ordination of action at this stage. The psychological reactions to disaster include disaster fatigue.

There is a typical sequence of emotional and mood reaction following natural disasters. The first phase involves a shock reaction, with survivors being stunned, dazed and bewildered. When this wears off, survivors usually become dependent, suggestible and altruistic. In the third phase many exhibit a kind of euphoria. Finally, they experience a mood of irritability and resentment. When shock reactions of various kinds persist in some survivors, they are referred to as cases of disaster fatigue and should be treated.

Special Problems in Nuclear Disasters

Responses in a nuclear emergency would introduce new factors. These are the physical power of a nuclear explosion, radioactive contamination and fallout and the fear which these two would produce. The following changes in human behaviour might be expected:

(a) responses of warning might be extremely difficult to control;
(b) survivors on the fringe of the explosion would be likely to experience shock and disaster fatigue symptoms. These might be confused with symptoms of radiation sickness;
(c) convergence by helpers from surrounding areas would not be likely. Survivors on the fringe might well move outward and away from their homes. The role of professional and organized emergency services would be even more vital than in natural disaster;
(d) the extent of destruction and casualties would have a more profound and lasting effect on survivors. Shock and disaster fatigue compounded with radiation sickness might persist for long periods of time. The dependency stage of the disaster syndrome might be exaggerated and people would be less likely to experience feelings of euphoria. Individuals might not exhibit identification with the whole community. If essential supplies ran short, ugly competition for necessities could break out;
(e) nuclear conflict would mean living in fallout shelters. This would involve new conditions in human behaviour. Events and problems fall into three phases;
  (i) entry;
  (ii) living and waiting;
  (iii) getting out.

If there were not enough shelters, selection of people for entry would involve problems. Living in them would produce a series of new situations to which people would react in various ways. Six principles are suggested for shelter living:

(a) provision of some minimum of physical care and comfort;
(b) development of a management structure so that a small well organized social system would be created;
(c) development of as many meaningful routines as possible within the framework of daily life;
(d) adequate communication within the shelter, and with the outside world;
(e) good leadership;
(f) preparation for existence after the shelter period.

When people were about to leave the shelter, their going out should be carefully organized. Small reconnaissance parties might well be sent out for specified periods.

It would be emphasized that, apart from preventing a disaster and nuclear conflict, there is no substitute for preparation and training. It is not necessary that everyone be trained; the key is organization and adequate training of organizational personnel. It would be men with the appropriate skills, role behaviour, and supporting organizational structure who would contribute most to survival.

The Strategy and Economics of Intercontinental Missile Defence

by

Dr. G. Lindsey,

Defence Research Board

Thermonuclear warheads release so much energy that the bursting of one at the most effective place can be equated for most purposes to the destruction of an entire city. Burst on the ground, they can contaminate

an area of thousands of square miles with radioactivity.

Thermonuclear warheads can be delivered at intercontinental ranges by aircraft or by rockets. The chief disadvantage of aircraft is their extreme vulnerability on their base (whether airfield or aircraft carrier), and their vulnerability in flight over enemy territory. The early ICBM's were vulnerable on their launching pad, but all of the newer land-based intercontinental missiles are stored in armoured underground silos, from which they can be launched by remote control. The submarine-launched missiles are even less vulnerable, since the vehicle can remain submerged for weeks on end, and launch them from below the surface.

With a substantial portion of their strategic striking power so invulnerable, neither of the superpowers need face a crisis with a strong temptation to strike before their power to strike is lost. To this extent the strategic situation is considerably more stable than it was a few years ago, when it was possible that a decisive advantage would go to the initiator of the first strike.

In all four categories of strategic weapons—i.e. land-based and carrier-based bomber aircraft, land-based ICBM's, and submarine-launched ballistic missiles—the numerical advantage is strongly in favour of the West.

The Two Roles for Strategic Forces

There are two roles in which strategic striking forces can be employed. The first, often known as "deterrence" or "assured destruction", is simply that of inflicting unbearable destruction to the lives and property of the enemy country. To be an effective deterrent, the force must be sufficiently large and invulnerable, and be organized in such a way that it is obvious to the enemy that even if he were to strike first and catch the deterrent force by surprise, enough of it would survive to inflict on his cities a punishment so terrible as to deter him from undertaking the enterprise in the first place. The assured destruction could be administered as a first strike, but the force must be able to carry out the role even if it is the recipient of the first strike. Invulnerability is an important requirement, and the submarine-launched missiles are particularly well adapted to the role. It seems that the strategic forces of both the USA and the Soviet Union are already able to provide assured destruction today.

The other role, "damage limiting", consists of attacking the enemy strategic weapons rather than his population centres. To the extent that his weapons are destroyed, the damage that they can inflict on the homeland has been limited. The ability to fulfil this role depends on the vulnerability of the enemy weapons, and especially on whether they are still in place when the attack is delivered. Damage limiting is likely to be far more effective in a first than a second strike.

The Strategic Alternatives for Defence Against Missiles

There are three general types of defence against missiles: to destroy them before they are launched, to destroy them in flight, and to mitigate the results of their arrival if they reach their target.

The first method, defence by offensive action, has already been discussed as the damage limiting role for our own strategic force.

Destruction of missiles in flight poses an extraordinarily difficult technical problem. The most vulnerable stage of the missiles flight is the "boost phase", the period lasting only a few minutes while the rocket motors are accelerating the missile from rest to its burnout velocity of about four miles per second. Anything that interfered with the planned operation of the guidance or propulsion during the boost phase would probably cause the missile to miss its target by a large distance. However, the boost phase occurs right at the beginning of the trajectory and is unaccessible to any defensive system based on the ground in another country.

Once boost is completed, the guidance and propulsion systems have served their purpose, and the only way to neutralize the weapon is to destroy the warhead. With very large radars on the ground and anti-missile missiles of high manœuvrability fitted with nuclear warheads, this can be done, but the interception will occur near the end of the trajectory of the ICBM.

If an ICBM is to encounter an anti-ballistic-missile (ABM) defence, it can be provided with "penetration aids". One type of penetration aid consists of decoys, light in weight but designed to give the same signals to the defensive radar as does the real warhead. It is probable that the defence would not be able to distinguish the decoys until they reentered the atmosphere within about fifty miles of the target, but likely that air drag would decelerate the light decoys faster than the heavy warhead.

The ABM system under development in the USA is called NIKE X, and embodies two anti-missile missiles. One, called ZEUS, engages the incoming ICBM some hundreds of miles before impact. The other, called SPRINT, intercepts within the atmosphere. Both are controlled by very elaborate radars on the ground.

The third type of defence is the passive variety, including early warning, concealment, dispersal, evacuation, and protective construction. The Ballistic Missile Early Warning System (BMEWS), with large radars in Alaska, Greenland, and England will detect the approach of missiles. Concealment is difficult in the open society of the West, and in both the USA and the USSR, population and industry are concentrated into urban centres.

Protective construction may be designed against blast or radiation. A structure strong enough to withstand a large blast pressure will also offer adequate

protection against radiation. Protection against fallout radiation can be obtained by relatively simple use of earth shielding and exploitation of existing structures.

There is a connection between active and passive defence. If an effective ABM defence made it highly probable that ICBM's aimed to burst directly over a target city would be destroyed in flight, but the protection were confined to the immediate area of the city, then the attacker could alter the aiming point to an area upwind of the city and fuse the warhead for a ground burst. The survival of the citizens would then depend on the existence of fallout shelters.

The Economics of Missile Defence

Each B52 bomber, each Minuteman missile in its silo, and each Polaris missile in its submarine represent an investment of about ten million dollars when its share of the overhead of the weapon system is included. The present US strategic offensive force has cost the country somewhere in the neighbourhood of thirty billion dollars.

The American ABM program has had over two billion dollars spent on research and development. It is estimated that installation of an effective defence system would cost another two billion on R & D plus about twenty billion for procurement and operation. A smaller scale of defence, intended for a small and unsophisticated attack from China rather than a full-scale attack from Russia, would cost five to eight billions.

It is not known at present whether an operational ABM system will in fact be installed, either in the US or the Soviet Union. The decision would take account of the enormous cost as well as on technical feasibility. If a system costing twenty billions were barely sufficient to defend against an attack by, say, four hundred ICBMs, and would be overwhelmed if the offence were to double its numbers, at a cost to them of 400 $\times$ \$10 million = four billion dollars, then the expenditure on active defence might be considered unwise.

A fallout shelter program providing space for every American would cost about five billion dollars. To give protection against blast for a hundred million urban dwellers would raise the bill to thirty-five billions.

The Canadian Situation

Canada is a very small factor in issues that determine world peace or world war. But our fate is closely related to that of the United States. It cannot be known whether a missile attack on the United States would include Canadian cities on the target list. But even if no missiles were aimed at Canada, it is probable that considerable damage would be done north of the border, by radioactive fallout if not by blast and fire.

To consider the economic factor, we can use US cost figures and note that our population is about one-tenth that of the USA, our Gross National Product about one-twelfth, and our annual defence expenditure (one and a half billion dollars) about one-fortieth of theirs.

It is evident that the role of strategic offence, deterrence, and damage limiting by attack on enemy ICBM sites is denied to Canada by reason of costs, aside from other considerations. It is also clear that the cost of ABM defence would represent a very heavy charge on our financial resources.

With passive defence by protective construction, the situation is different. Fallout is a hazard to large areas of rural Canada which are not likely to be prime targets themselves, whether or not Canadian cities are attacked. Fallout shelters are very cheap, on the scale of defence expenditures—\$20 per occupant on the American calculation. We spend about \$75 per person per year on defence, and fallout shelters would not become obsolete.

A study based on the cost-effectiveness of passive defence in Canada has produced the following conclusions:

(1) The best way to spend \$100 million is to provide the organization to enable existing resources to be effectively exploited. This involves warning, radiation monitoring, fire precautions, medical arrangements, rescue equipment, and training. This is, in fact, exactly what is being done today by EMO and the Army.

(2) If an additional \$100 million were available, it should be used to construct fallout refuges outside the major cities.

(3) Funds beyond the \$200 million, should go into construction of blast shelters in the major cities.

The United States Military Strategy

by

Melvin Conant,

Standard Oil Company, New York

U.S. military strategy is based on the concept of strategic deterrence as its most essential element, and the means and will to exercise other options as circumstances may allow. Thus we are not now—and have not been for some years—in a military position of having to respond to a challenge with our ultimate force. We can so deploy our forces as to meet virtually any challenge with appropriate and not excessive strength.

The nature of the threat covers a spectrum from general, nuclear war to wars of "national liberation" to the exigencies of Soviet-style "co-existence" campaigns.

It is of vital importance that guard be set against all possible alternative Soviet actions. The penalty for being off guard, or mistakenly assessing enemy intentions and capabilities could be expensive for an ally but oblivion for us. Hence, the U.S. should be expected to be reluctant to act on the "findings" of the most recent surmises about the U.S.S.R. and Communist China.

If flexibility of response is the theme of U.S. strategy, then a continuing, careful watch must be maintained over the technology, resources, shifting definitions of national interests, the degree of political will as well as the capabilities of the enemy. And in all these respects, the most difficult yet vital aspect is your ability to judge his actions/reactions not as you would perform but as he may.

The arsenal of *General Nuclear War Forces' Capabilities* includes the array of ICBM, SLBM, LR/AC weaponry and A/ICBM area defense and related terminal defense and other passive defense measures. The twin objectives being (1) to deter deliberate nuclear attack upon the U.S. and its allies and (2) to limit damage to population and industrial capacity.

The arsenal of *General Purpose Forces* includes Army, USMC, USAF (Tactical) and USN forces (except SLBM). These provide us, with the General Nuclear War capabilities, our "options".

Allies are inescapably involved in the implications of U.S. strategy and in some, at least, of the consequences of its implementation. The present existence of an *imbalance* in U.S. and U.S.S.R. strategic forces, with the *preponderance of power resting with us*, does have the effect of giving allies an "umbrella" under which they may exercise a degree of freedom of discussion and of maneuver they would not enjoy if only a balance had been struck.

The U.S.S.R. (and Communist China) have repeatedly tested our resolve: Northern Iran, Greece, Turkey, Berlin, Korea, Guatemala, Cuban missile crisis and now Vietnam. Next? Thailand? Malaysia? Northern Iraq? Central America? Korea?

The easy assumption is that the U.S.S.R. has changed its spots; that it is permanently engaged in a conflict of interests with China and that the possibility of further cold-war type eruptions is slight. This is one view which is currently very widely discussed especially by our allies. If we accepted this view and acted accordingly, we would lower our guard. While there are respectable pressures upon us to do so, and considerable urging by other interests for us to relax, the professional military is reluctant to do so again because the consequences of error can be so immense, and the cost is so comparatively minimal of maintaining one's guard over many years to allow a prudent test of Soviet and Chinese will and intentions. The necessity for an EMO to be ready to deal with the by-products of the ceaseless probing under way by our present enemies is, therefore, in my view, an essential element in any ally's arsenal of measures designed to facilitate recovery.

Emergency Planning in Canada Today

by

C. R. Patterson,

Director General, Canada EMO

The question I have been asked most often since I assumed my post with Canada EMO is, I assure you, "What is the basis of emergency planning in Canada today?" To set this clear in everyone's mind at the outset I reiterate my constant answer, "Preparedness for the possibility of wartime civil emergency has been, and is now, the main focus of our activities".

The question that I ask, of myself in particular, and that I would like all of you to ask yourselves and to ask the staff responsible to you is this: "What degree of careful thought and mature, well-informed action and continuity of purpose is being employed in our emergency planning today".

Today the international activities of the world are dominated by two great powers. Canada is immediately adjacent to one of these and our future is linked, to a greater or lesser degree, depending upon the situation, with the international problems that impinge upon, and the international activities engaged in by the United States of America. There is no positive guarantee today that these two powers will not be locked in conflict at some point in time and that this conflict will not be accompanied by an exchange of nuclear weapons. On this thought, the possibility of an exchange of nuclear weapons, hangs the main fabric of our emergency planning.

Our present thinking stems from the "BRAVO" shot at Bikini Atoll in 1952, when, in a fraction of the time it takes to blink an eye, in a single thermo-nuclear explosion, energy equal to that possessed by 15,000,000 tons of T.N.T. was released. In a fraction of a second, a force greater than that exerted by all the bombs exploded by all warring nations in World War 2, and this includes the atomic bombs detonated over Nagasaki and Hiroshima, was released in one explosion. It is impossible for the human mind to contem-

plate such figures but for some small comprehension of that of which I speak, just remember that a ten megaton bomb carries the same potential energy as does a trainload of T.N.T. stretching continuously from Vancouver to Halifax. Impressive as was this explosion, however, the most startling outcome of the explosion was an appreciation of a previously unrealized weapon phenomenon. A nuclear weapon, detonated at its optimum height, produces a fireball which touches the earth and vaporizes the materials with which it comes into contact. These are carried up into the classical mushroom cloud where they condense and come down in a rain of what is known as fallout. The significant aspect of fallout is that it carries, adhering to the otherwise innocuous condensed materials an agglomeration of radioactive particles that can spell death to those who remain in close proximity to them without adequate protection.

It was realized for the first time that, to survive the immediate impact of a nuclear weapon is not, in itself, enough. Consideration has to be given to the protection of the population and to the operation of our necessary governmental, economic, agricultural, food processing and other activities under these potential conditions.

Should North America be attacked by an aggressor with a nuclear capacity, it is probable that many centres in the United States would be attacked and possible that several Canadian centres would be attacked as well. This would mean that our prevailing westerly winds would probably, in general, drag a curtain of fallout of varying intensity across the breadth of the populated areas of our nation.

Emergency planning, then, requires, first of all, a study of the total Canadian Scene and, secondly, the preparation of a plan to deal with all essential aspects of Canadian activity in a time of such possible emergency. To name a few of the aspects we must consider, I need mention but a few: the supply of oil, foodstuffs and clothing, the availability of transportation and shelter and the provision of health and welfare services.

I do not, however, quote these problems as bogeys to impress you with a sense of futility in the face of the possible threat. I have a tremendous faith in the capacity of man, as a highly intelligent, unspecialized being, to adapt himself to any situation. Man, however, requires some time to make the adaptation and some base from whence to go forward. This is the purpose of emergency planning. Man, today, requires a plan from which he can operate if stricken by sudden disaster. As a member of today's highly complex specialized society, he must have access to resources for survival and a preformed framework of activity within which he can operate for his own benefit and for the benefit of his family and the community.

I reiterate that man needs a plan, a blueprint for action in emergency. What, then, are the characteristics of this plan? It must be simple but complete. It must select carefully the aspects of our daily wants and activities that are essential for survival in an emergency. It must be up to date, recognizing changes in technology, community and human resources and governmental organization. It must be exercised by a group of professional planners whose function it is to maintain a viable plan and a capacity for use in emergency. Most important, it must be readily available to go to work on demand.

The professional planner is the hub of the survival plan which, in turn, is the vehicle which will support the individual and the community in time of emergency. Upon the clarity of perception and the effectiveness of the planner depends the usefulness of the plan.

Canada EMO has developed a Canada Survival Plan which provides the basis for programmes which will progressively increase the emergency capability of the nation. The objectives of this plan are:

firstly—to protect and preserve life and property;

secondly—to maintain a degree of government leadership and services, and

finally—to conserve resources.

The basic planning concept is that there will be, at every level of government a group of professional planners. Their purpose is, mainly, to prepare an effective plan for the continuity of essential government services. Their work will be an extension of the peacetime responsibilities assumed by various departments and agencies in municipal, provincial or federal areas of activity.

The role of Canada EMO in all this is that of a co-ordinating and contributing agency. It maintains an overall national picture and stimulates and guides activities in the total field of emergency planning. In addition, it assumes the responsibility of directing research and providing services and information where such is not available through other agencies. It is responsible for maintaining a maximum degree of current emergency capability in the midst of the development of a forward-looking programme. It is held responsible for the preparation of exercises for the determination of the state of capability and the need for changes in plans. Finally, it operates constantly in the concept of vulnerability reduction, that is, the means by which a maximum degree of effectiveness can be obtained from the manpower, material and money available.

When I speak of programmes, I do so only briefly but the very titles themselves will give you some idea of the tremendous importance of and the difficulties involved in the programmes. Canada has, and continues to develop, a highly sophisticated attack warning system. This is linked, in turn, to an emergency broadcasting system and a network of emergency communications. Programmes are being developed and extended in the area of shelter capability and radiological defence. Emergency health and emergency welfare pro-

grammes are pushing forward with equipment and plans. Our capital construction programme provides each year for the extension of emergency government facilities and studies are being carried out in the field of damage estimation and resource analysis. Standby legislation is the mutual planning responsibility of leaders in several programmes.

In these fields, and I have just touched on the fringe of the total activity, Canada EMO co-operates with others in the field of planning to determine goals in qualitative and, most important, quantitative terms. In consultation with others in the same realm or activity, priorities will be established on the basis of risk.

Let us now turn, for a moment, to a more recent development, namely, Peacetime Emergency Planning. In February of 1966, the Canadian Government charged Canada EMO with the initial Federal response to peacetime emergencies in which the federal government was involved directly itself, or indirectly by provincial invitation. This has given a new purpose, life and interest to emergency planning. It provides for the peacetime use of skills, equipment, installations and capacities. It provides a live exercise for plans which can otherwise be tested on a hypothetical basis and makes the purpose more real and thereby more valued by the planner and the public.

I would like to venture, however, one word of caution with respect to developing peacetime programmes. Every peacetime emergency programme should ensure that it does not duplicate the services that are being supplied by regular facilities, such as the police department or the municipal health services. It should be prepared to augment, as seems wise, peacetime facilities. It should plan to co-ordinate activities in emergencies where no other co-ordination has been designated, and should provide resources that are understandably readily needed in an emergency but which are not supplied by regular operating departments. The watchward is EMERGENCY, EMERGENCY PLANNING, PLANNING FOR AN EMERGENCY, not the development of a continuing, large, supplementary, routine, civil service agency or group of agencies.

Finally, one last thought for you—you who are leaders in various fields of government and in the field of emergency planning. Emergency planning cannot exist as an isolated function. Emergency planning is viable only when related to the realities of organization and activites in the life of today. Planning requires the support and imaginative direction and assistance of the most senior officials in today's government, in today's industry and in today's commerce. You are the leaders. You are the originators. On you depends very heavily the effectiveness of the emergency capacity of our nation. Your interest, which you have expressed in being here with us, when you have so many other calls on your time, augurs well for the future of our concerted programme. On our part, I pledge on behalf of Canada EMO, our constant interest, our enthusiasm and our purpose to work with you imaginatively and tirelessly, in our mutual responsibility. ▲

CANADA EMO

One of the sessions of the Provincial Co-ordinators' Conference at the Canadian Emergency Measures College, Arnprior.

THE CIVIL DEFENSE DISCOURSE

by

Dr. Jiri Nehnevajsa

This is the text of an address given at the Provincial Co-ordinators' Conference, held at the Canadian Emergency Measures College, Arnprior, Ontario, from November 29 to December 2, 1966. The author stresses some strategic, political, technical and public attitude factors involved in achieving civil defense readiness.

Few men desire war. But few are also those who believe that a thermonuclear war cannot occur. Thus the threat of a cataclysmic conflict persists. In part, we have already learned to live with it. In part, we are still learning. Preemptive war in which an enemy's strategic force would be destroyed before it could be put to use presents an unacceptable damage limiting option. It is morally unacceptable. And it does substitute the certainty of war for its current, if non-zero, probalities.

Deterrence may fail to avert the holocaust. Its objective, of course, is to set up sufficiently impressive strategic forces which are capable of absorbing an initial enemy attack and, at the same time, retaliating at a level which makes the costs of warfare unacceptable to the enemy almost under any circumstances. Yet, deterrence may fail.

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Dr. Jiri Nehnevajsa

If enemy weapons were launched, missiles and bombers alike, we must therefore have an option to destroy the weapons before they reach their targets. Thus we require some systems of active defenses precisely because preemptive war will not be launched, and because the deterrence philosophy can fail. At the same time, the odds that all enemy weapons could be destroyed by active defense systems are quite low. Despite active defense capabilities, we must assume that some, indeed even many, enemy weapons would get through to their targets. Hence, we must have a passive defense capability as well to degrade the effectiveness of offensive weapons which succeed in penetrating the active defenses. In this context, therefore, measures of civil defense are an aspect, and an integral part, of defense planning and of the national and con-

Biographical Notes

Dr. Nehnevajsa is Professor of Sociology and Chairman of the Department of Sociology, University of Pittsburg.

Born in Czechoslovakia in 1925, Dr. Nehnevajsa was educated at the University of Masaryk, the University of Lausanne and the University of Zurich. He obtained his Ph.D. in Zurich.

Prior to his appointment in Pittsburg, he was Assistant Professor of Sociology at Columbia University and served as Chairman of the Products Control Committee of the System Development Corporation in Paramus, N.J. He was Assistant Professor and Instructor in Sociology at the University of Colorado.

Dr. Nehnevajsa is a member of the Civil Defense Advisory Committee of the National Academy of Science, a member of the executive board of the Inter-University Program in Institution Building, an honorary member of the Inter-American Defense College, a member of the scientific advisory board of CONSAD Research Corporation, chairman of the international board of directory of National Research of Colombia, and a miembro correspondiente of the Instituto de Estudios Politicos of the University of Madrid, among others.

He has been consultant of American Institute of Research, CONSAD Research Corporation, Institute for Defense Analysis, System Development Corporation, Pan-American Union, Dunlap and Associates, and others.

He is a Fellow of the American Sociological Association, member of the American Association of Public Opinion Research, American Institute for Astronautics and Aeronautics, and others.

tinental defense posture. They are then as much a requirement as are alternative damage limiting options.

If thermonuclear weapons could be subject to adequate controls or if they were dismantled and destroyed, we would also have a system which would minimize damage to life and property. Measures of arms control and disarmament form similarly an essential component of the overall defense continuum.

None of the systems are perfect for a variety of reasons. Some, like preemption, are both unacceptable and even technically not fully feasible in that they could not guarantee such degradation of the enemy's offensive capability that he could not retaliate. Some of these options are at best in their infancy and with no assurance of forthcoming consummation: arms control and disarmament measures are of this type. Some, like deterrence, are based on possibly false evaluations of enemy intentions and of his willingness to take risks of a certain kind and magnitude. Some, like active defense systems, are constrained by reliability factors and by the fact that the enemy has a relative option to saturate the defenses if he so desires. Some, like passive defense measures, are not certain to insure the survival, and probably can never do so, in areas under direct attack. Indeed, a mix of all such systems is therefore needed. We must have a strategic capability to absorb an attack and then launch one. We must have the defensive capability to destroy as many attacking weapons as possible. We must have the defensive capability to minimize the effects of those weapons which reach their targets. And we must have a capability to continue patiently exploring measures which lead to adequate arms control and even disarmament without, at the same time, degrading the overall ability to wage war.

Needless to say, the problems of reasonable tradeoffs among the options are exceptionally taxing. The task of policy makers is anything but enviable. Furthermore, the business of Government is not only an issue of defense. If difficult technical and political choices surround the evaluation of reasonable defense system mixes both for the present environment and for the future contingencies which can at best be estimated, the underlying properties of the defense posture are also greatly dependent upon the vast variety of concerns which our Governments and people must have in a world of limited wars, insurgencies, social and political revolutions and upheavals, technological transformations, nationalisms, poverty and deprivation, discrimination, poor health and education and so on.

Many programs, each in itself extremely important in its potential, must compete for limited resources in funds, materials and men. Each program has its strong protagonists. Each has its strong opponents. The implications are staggering and anyone who seeks to reduce the problems of national policy to simple solutions cannot but fail.

Yet, one central conclusion seems inescapable: in a world in which the danger of thermonuclear war persists, it is extremely hard to imagine that our nations would do better without any reasonable system of civil defense than it would do with it. If a requirement for national defense systems exists at all, as indeed it does, then civil defense measures are inextricably linked to a nation's capacity to defend itself in the event of a central war which nobody wants but which no one can merely wish away.

This seems so self-evident that it is almost puzzling to find that there should be fundamental disagreements on the underlying premise. Despite this, most of you, not unlike your counterparts in the United States, must be finding your task quite frustrating. Let me attempt to identify some of the main sources of these frustrations in as much as the resolution of the attendant problems may well bear directly on the capability to design and implement systems which establish a sensible level of preparedness.

By far most men do not expect drastic or cataclysmic changes in the status quo to occur in very short order. Thus most men tend to imagine that tomorow will be much more like today than very different from it. Indeed, most often this is so.

The changes which transform a given state of affairs in a drastic manner are generally viewed as emergencies. They have a finite probability of occurring. And they could conceivably occur at almost any time. While most men would find it difficult to lead their lives in expectation of, and readiness for, emergency events which may never come, all societies display an elementary, perhaps intuitive, wisdom in institutionalizing roles of emergency specialists. Thus societies pass on the responsibility for worrying about the possible but uncertain cataclysms to some in their midst.

One major source of frustration associated with the design and implementation of civil defense systems stems precisely from this, the apparent and real public apathy. I submit to you that this is a rather natural response. Since the task of being concerned with emergency measures has already been delegated to some, most people simply feel that they do not need to worry about the problems any more. After all, *someone*—in this case yourselves—is already doing it.

This helps to account for the fact that most people remain quite ignorant about what to do in an emergency of any kind; and that they are not even ready to absorb the relevant information. In the absence of an actual emergency, no informational or educational campaign seems to succeed very well. And this fundamental attitude is altogether compatible with the consistent finding over the years that people are actually very favorably disposed to emergency systems and to systems of civil defense. Yet, specific imformation about behavior under crises is not relevant to most people on a day-to-day basis, and when it comes to choosing from the millions of messages which impact upon men every day, the choice favors knowledge and information of apparently more immediate value. After all, if an emergency actually came about, the specialists

—indeed again yourselves—would certainly be able to pass on the word on effective countermeasures.

I mentioned already the difficult choices on the part of the men in policy making positions. It is then also not surprising that they, like most members of the society, would tend to be preferring patterns of resource allocation to problems of the day and to problems which are certain to be with us than to contigencies which may or may not take place. Hence, at the level of Governments, the resource flow into civil defense systems will always tend to fall far short of any reasonable need. There are *always* more pressing things to be done with the same limited resources.

This tendency is reenforced by the fact that civil defense measures deal with a *one-shot* emergency predominantly so that there is continued doubt as to whether the required investments are worth the return especially if the risk of war does not appear particularly acute.

This tendency is also underscored by the fact that the state of technical know-how in certain aspects of the design of civil defense systems is far from perfect. We have excellent, and probably quite definitive, knowledge concerning realistic protection against fallout. The same body of knowledge with regard to protective structures against primary weapons effects is still largely lacking. Similarly, we do not know enough about fire, or the so-called firestorm, hazards. These factors, too, affect the pattern of resource allocation to measures of civil defense.

In any event, our technical knowledge keeps increasing. But at no particular point in time can we readily say that we have all the knowledge required. Hence, a significant measure of frustration for civil defense operating personnel must come from the very simple fact that our current solutions may turn out to be only second best. Nor is the task facilitated by the all-too-common observation that the emergency specialists generally do not enjoy high prestige as long as there is no emergency. It is an ungrateful and unheralded job at best. Indeed, people support such activities somewhat grudgingly under conditions of relative normalcy: the emergency specialists seem a luxury when all goes well; and they are a constant reminder of dangers which most men would prefer to forget about.

There is, indeed, more to that. The work of civil defense personnel is unlikely to be *ever* appreciated. In the absence of war, it will clearly not reap any rewards. In the event of a war, the key question will be asked: why didn't you do more? And it will be raised in this manner regardless of the level of preparedness attained because there is always more that could be done.

The factors which now operate to provide civil defense organizations with less than reasonable resources to enhance the national level of preparedness will be the identical factors which will produce resentment with the actual preparedness state in time of need. This is a perplexing dilemma indeed. Even if such questions are never voiced, faced with the trauma of nuclear disaster, you will yourselves raise the issue, if only in the silence of your heart: have we done enough? what else could we have done? how could have we done better? And there will remain a nagging doubt *no matter* how much you may be achieving, no matter how well you may have done, no matter how dedicated you may have been.

And then there is the frustration which results from the hectic pace of day-to-day activities.

At all levels of Government, you find yourselves in a web of larger structural relationships. These levy demands on your energy and time often entirely unrelated to your main responsibility, and as long as there is no emergency, those things which it seems necessary to do *immediately* do not leave much of an opportunity to be concerned with longer range planning and development. There is a strain operating on your roles to devaluate, to some extent, the tasks which are central to the accomplishment of the organization's objectives. And then, there is also no closure. There is no end in sight. There is no point in time or a plateau of readiness at which you will be in a position to say that you have attained your goals, and the maintenance of the system is essentially all that is needed.

I have argued that the mission of civil defense is an integral aspect of the larger national defense posture. Yet, the solutions, procedures and approaches which are applicable in the defense establishment cannot be normally employed in the defense of civilians. This makes many measures, including such things as periodic large scale drills, exceptionally difficult to consider and just about impossible to adopt. As an aspect of defense and as a component of national policy, civil defense systems require a degree of national centralization if only for the sake of basic *standardization* and particularly if we begin considering the task of recovery and reconstruction as a constraint upon the design of desirable civil defense programs.

This raises quite obviously a host of jurisdictional and administrative questions, and the more so the greater the administrative decentralization of our nations to begin with. There are problems of local autonomy: the balance between the need for some form of national management and the necessary and desirable reliance on local resources, for whose benefit after all the whole program is being undertaken, is not easy to strike.

Furthermore, this creates strains even within the civil defense structure itself. At the national level, it is impossible for anyone to design adequate plans which take into account all the parameters of local uniqueness. At the more local levels, no one can fully comprehend the full picture which gives rise to certain plans and policies as a common denominator of a whole nation. The problems of meaningful communication throughout the organization are thus chronic. The job of designing and implementing civil defense sys-

tems is an overwhelmingly complex one. It is, above all, a technical task even if the decisions to adopt various solutions are largely political in character. As a technical task, the system design, implementation and management effort clearly requires the use of professional expertise. Yet, we find an exceptional reliance on volunteers. This does not mean that many volunteers are not technically competent or cannot become so. But the odds do not favor many of them being sufficiently expert to deal with the intricate issues of emergency systems. In this regard, the relative lack of resources almost necessitates this extensive use of volunteers, and the availability of volunteers provides further justification for *not* increasing the resource level. At the same time, however, experts are hard to come by: all institutions of society vie for their services, and there are not enough of them to begin with. And there are probably not enough of those who might be willing to take the frustrations which go with the basic effort. Thus the volunteers may often abound in enthusiasm but lack competence; whereas the experts may well be competent, but often lack enthusiasm.

Now apart from all this, and indeed in addition to these pressures, there is an active opposition in each of our nations to measures of civil defense. It represents a very small minority of our populations. But an organized one. And a vocal one. The arguments are emotional and ideological in character. But they do not make the task any easier. Some of these viewpoints are grounded in firm beliefs. Their advocates actually interpret the world in a manner compatible with their position. But often, the arguments reflect a political strategy which has the consequence of producing discussions and continuing a discourse thereby diverting men and resources from engaging in action. Many of the arguments are well meant, and they are meant for the benefit of us all. They may not be valid, but they are sufficiently compelling to demand attention. And all have to be heard, studied, considered because this is a long and venerable tradition in our societies by which we come to grips with the difficult choices before us.

Let me identify some of the main issues along this dimension, and comment briefly on a few of them.

(1) *A thermonuclear war is impossible and there is no need for CD*

(2) *The probability of a central war is so low that CD is not needed*

(3) *A central war would be fought with conventional weapons*

(4) *Man can do nothing to protect himself anyway —war and peace, life and death of men and societies are in the hands of God.*

Two points need to be made about this class of positions which all sum up to the claim that civil defense systems are not *needed*:

(1) Only very few people in our countries adopt these views

(2) It has been a national policy in both of our countries to set up organizations to handle problems of thermonuclear warfare and its aftermath.

The views, if taken seriously, reflect a particular risk philosophy. It is well to suggest that the risk which an individual might be willing to accept for himself need not be the same risk he would, or indeed should, be willing to accept for others, or even for a whole society.

(5) *No defense at all is possible against a nuclear attack*

(6) *The enemy might alter the nature of his attack and negate civil defense measures*

(7) *No protection against CBR warfare*

(8) *No protection against primary weapons effects*

These central arguments concerning the effectiveness of emergency systems may well bear on particular system design choices. But it is hard to accept the premise that they apply to all alternatives. Furthermore, only a few people again, one in fifty or so, subscribe to these beliefs and draw the conclusion therefrom that measures of civil defense are useless.

Another cluster of issues concerns the cost factor.

(9) *Adequate programs would be too expensive*

(10) *Funds spend on CD would be better spent on other national programs*

Still other views have to do with warning.

(11) *There will be no warning time*

(12) *Many people would not hear warning signals*

(13) *People would not recognize such signals for what they are*

(14) *They would not know what to do*

(15) *Not enough time between warning and impact to get to shelters*

Indeed, in this warning problematic lie some of the most difficult, and basically as yet unsolved, issues in system design.

Now even if people would get to shelters, many problems remain:

(16) *Panic and violence would make shelters nonsurvivable*

(17) *Shelter stay would have detrimental psychological effects (insanity, breakdowns)*

(18) *People could not survive: they would suffocate, starve to death, and so on.*

All these are, of course, possible effects. In part, we would have to expect serious problems of this type. The public, however, is quite optimistic in regard to the shelter-stay period, perhaps much too much so. Yet, even if major difficulties made some shelters nonsurvivable, as I would consider quite likely, this cannot negate the value of the whole program.

Many arguments have to do with the post-attack world. Life might not be worth living. The conditions of existence will become so hostile that survival on longer run is not possible. The society will be reduced to a level of barbarism. The nation would be doomed anyway due to genetic damage. The barren, scorched earth will not be supportive of any human existence. In

their extreme form, the arguments are probably patently invalid. But even though there may be much said in support of such pessimistic projections and guesses, does it follow that we simply give up? Wouldn't the survivors be the appropriate people to determine whether life is worth living?

Many arguments bear upon the presumed impact of civil defense systems upon basic personality structure.

(19) *Civil defense would make people anxiety-ridden*

(20) *People would become more aggressive and bellicose*

(21) *Black-and-white authoritarian orientation is enhanced*

(22) *The systems will generate a sense of complacency and a false sense of security*

(23) *People will become more selfish, concerned only with their own survival.*

The available evidence does not support the main thrust of these arguments. Data from disaster studies consistently show an increase in cooperativeness and altruism in the crisis situation and in the immediate aftermath. People expect to help one another, and claim that they would do so.

The arguments tend to overestimate the potency and importance of civil defense systems while, at the same time, the claim is made that such measures would be ineffective. On its face value, the idea that a civil defense system might convert a nation of rather cooperative individuals and families into a society of egoists pursuing their private interests to the neglect of anything else, is simply unsupportable. Can it be argued that better, if imperfect, measures for the protection of our people would make the nation more complacent or falsely secure or should one consider it possible that the *absence* of rational measures to increase survivability is tantamount to "false sense of security" and "complacency"?

Several issues may be raised with regard to the postulated effects of civil defense on society.

(24) *It might greatly increase the militarization of the societies.*

(25) *Further centralization of power at the Federal level occurs*

(26) *Adequate programs would divert significantly our resources, manpower, funds and materials*

(27) *The programs will lead to the burgeoning of a vast new federal bureaucracy*

(28) *They may be deeply divisive and broaden or create major schisms in our societies because of the inequality of protection.*

Clearly, it would be possible to design and implement civil defense systems which might have some of these undesirable effects. But these are not the classes of alternatives likely to be recommended, and certainly not to be adopted. The basic stability of our societies has proven itself in a series of historical experiences, national and international, in contrast with which the impact of *any given* program seems to dwindle into insignificance.

And finally, there are arguments concerning the international environment.

(29) *Civil defense may be so provocative that the Soviet Union might wage a war to forestall an assumed preemptive attack on our part*

(30) *Expectations of war will be affected. People will act on cues of an expected conflict increasingly, and this will increase the objective probabilities of the conflict.*

(31) *Our Governments might become less flexible in their negotiations toward peaceful settlements of existing crises.*

(32) *Efforts at further advances on the arms control and disarmament spectrum will be jeopardized.*

Certainly, we do not know Soviet intentions. Yet, the Berlin airlift, the Korean engagement, the Cuban quarantine, the development of the Polaris system, the Viet-Namese conflict have not been sufficiently provocative to lead to a war. It is hard to imagine that fallout shelters would have this effect especially in view of the fact that the Soviet Union has an extensive program of its own.

Even if the self-fulfilling prophecy were to be operative: since people do not want war, wouldn't their actions based on cues of expectation be such as to reduce the threat of war rather than to bring war about?

To say that our Governments might become more intransigent in its international negotiations seems to assume that the leaders of our nations might be willing to tolerate the carnage of 80 million or 100 million people but that they would find losses of 120 or 150 million unacceptable. It means that if some fifty or more million people were protected against fallout, our statesmen would be willing to take high risks with the lives of the remainder of our populations. This is a line of reasoning which is a little hard to take.

And finally, it may be actually argued very effectively that prospects for arms control and disarmament might be improved as our civil defense preparedness is improved rather than the opposite. Less inspection and control of nuclear weapons might be acceptable if the population were better protected, especially against small attacks most compatible with broken promises on the part of the enemy. Arms control agreements of a viable nature might be possible even if China were not a party to them. These are some of the main dimensions of the discourse concerning civil defense. They are some of the main arguments you may have encountered. The civil defense issue presents an opportunity to question national defense as a whole, and to probe into the dilemmas of national policy as such. The civil defense effort serves as a focal point, not unlike the Viet-Namese conflict, around which more basic ideological differences already in existence can be rallied and crystallized.

(Continued on page 21)

DR. E. E. MASSEY
RECEIVES A 1966 CHARLES PFIZER MERIT AWARD

Dr. E. E. Massey, a long-time scientist with the Defence Research Board, was the recipient of a 1966 Charles Pfizer Merit Award for his outstanding contributions to civil defence and Canadian disaster planning. Dr. Massey received the award at the annual conference of the United States Civil Defense Council in Louisville, Kentucky, last October. He was the sixth Canadian to have been so honoured.

Commenting on the recognition paid Dr. Massey, Mr. J. F. Wallace, Acting Director General of Canada Emergency Measures Organization wrote:

> "Since 1950, when he was assigned the task of being a scientific adviser to the Federal Civil Defence Co-ordinator, Dr. Massey has been one of the staunchest supporters of civil emergency preparations. In his quiet way, he has been able to influence people to maintain a balanced view on the effects of weapons. His experience and wise counsel over a period of sixteen years are valued highly by all who have been privileged to work with him.
>
> "Although the common view of a scientist working 'aloof' and behind a laboratory is well recognized, Dr. Massey has ventured forth into the public view by his contributions as a major participant on courses of all types at the College and in the provinces. He has represented the scientific aspects of our program at a variety of international conferences in a most credible manner.
>
> "The recognition of his services by the Pfizer Award is well justified."

Dr. Massey was born in Hadfield, Derbyshire, England, in 1904. The family moved to Magog, Quebec, in 1916. He obtained a B.A. from Bishop's University in 1928, and a Doctorate in Chemistry from McGill University in 1933. He then joined a Montreal firm of consulting chemists where he was employed until 1937, when he returned to McGill University as Private Research Assistant to Dr. Otto Maass, Chairman of the Chemistry Department. Late in 1938, Dr. Massey was appointed Chief Chemist with the Imperial Tobacco Company.

He obtained a leave of absence in 1940 to join the Canadian Army with the rank of captain and became Chief Instructor in Chemical Warfare at the Canadian Small Arms School. Two years later, he was transferred to the Chemical Warfare Laboratories in Ottawa where he was head of the Intelligence and Field Trials Section.

For two years following the end of the Second World War, Dr. Massey was technical narrator with the Canadian Army Historical Section. He left the Army in 1947 with the rank of lieutenant-colonel to join the staff of the newly-formed Defence Research Board. Since then, he has been in charge of research relating to civil defence in addition to his duties as a staff officer with the Directorate of Atomic Research.

NATIONAL DEFENCE

Dr. E. E. Massey

Dr. Massey was a member of the first Canadian group to attend nuclear weapons tests at the Nevada Test Site in 1955. He attended the Second Protective Construction Symposium at Santa Monica in 1959. In 1960, he was the Canadian Delegate to the NATO Civil Defence Scientific Working Group in Paris; participated in the Meeting on Environmental Engineering in Protective Structure at the Academy of Sciences, Washington; and was a member, until 1963, of the Shielding Sub-committee of the Academy of Sciences (United States) Advisory Committee on Civil Defense. Dr. Massey attended two symposia in Albuquerque, in 1963: Shock and Blast, and Biological Effects of Shock and Blast.

Dr. Massey is a Fellow of the Chemical Institute of Canada, a member of the Emergency Measures Organization Panel on Research and a member of the Interdepartmental Radiological Defence Working Group (Canadian Government). ▲

The Social and Psychological Effects of Nuclear Attack and Their Implications for Recovery of Society

by

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This paper was presented to the 1966 meeting of the NATO Civil Defence Committee Scientific Working Party. Dr. Nordlie has explored many of the areas in which social organization must adapt to the environmental changes following a major nuclear war.

Background

This paper reports on a program of research aimed at the study of the probable social and psychological effects of a nuclear attack. This research has been performed by a private research organization, Human Sciences Research, Inc., under contract to the Office of Civil Defense over the past five years.

The original impetus for initiation of research on this subject was the realization that civil defense planning for operation in a post-attack situation must take into account the nonphysical effects of an attack as well as the more highly studied, better known, physical effects. It was also realized that a major nuclear attack would differ in significant ways from any experience with disaster that man has had and that very little was known about the probable social and psychological effects of an attack. Whatever literature existed concerned either experiences in World War II or experiences in natural disasters. In sum, there was little information on which to base meaningful estimates of the probable, nonphysical effects of an attack. Consequently, there existed no capability for incorporating knowledge about likely social and psychological factors into civil defense policy development and program planning.

In addition to there being little information available, it has been a subject which has aroused emotions and has been dealt with more frequently by polemicists with political action motivations than it has been by scientists trying to study the problem objectively. And, not only was little information available, there were inherent obstacles in the way of applying the methods of science to this particular problem. There was no data from comparable experiences to utilize, and there was no possibility of constructing a situation for research purposes which would in a meaningful way duplicate the conditions of a nuclear attack.

Despite these difficulties, however, there is an irrefutable logic underlying the proposition that information about the social and psychological effects of an attack is necessary for effective civil defense planning. For planning purposes we would like to know what the survivors would do, whether the social order could be maintained, whether the social, political, religious, legal, economic and familial institutions would survive and in what ways they might be changed, whether the size of the surviving population would decline, remain constant, or increase, what the possibilities are for the production and distribution systems to function and to continue to utilize pre-attack technology. These questions are all parts of the central question of the capability of society to survive and recover from a major nuclear attack, and their answers all depend, in part, on the effects of an attack on individual survivors, collectivities of survivors, and their social institutions. It is my purpose to review the efforts we have made to study the probable social and psychological phenomena of hypothetical post-attack situations and to suggest some of the major implications for societal recovery and civil defense planning that can be inferred from the results of these studies.

Perspective

The general problem can be studied and examined from a variety of different standpoints and it is appropriate to begin with a word about the particular perspective which we have developed in this program of research.

We began our work with the realization that we were faced not with one problem, but with a whole field of problems; there was need to introduce order and structure into the field if we were to proceed other than haphazardly and fortuitously. Our work began, therefore, with the attempt to structure and describe the possibilities for research on post-attack behavioral and social problems. In this paper, I will not describe the framework we developed in the first year's work except to indicate that it consisted of a matrix formed from the intersection of two sets of categories. One set consisted of post-attack time phases—attack period, shelter period, emergence period, etc. These were cross-cut with four categories into which we divided

behavioral and social research problems. All such problems were considered phenomena of either (1) the individual system, (2) the social system, (3) the ecological system, or (4) the cultural system. The outline of this framework is shown in Figure 1. This is not a theoretical model but merely a way of structuring a unified conceptual approach to an extremely complex problem area. We needed some scheme to use in scanning the state of the behavioral and social sciences for the purpose of defining a number of substantive, problem-oriented studies, the results of which would help describe the critical social and psychological effects of an attack.

Within the cells of the matrix (Figure 1), we described the requirements, objectives, and the probable research approach of over fifty research studies which appeared to be potentially important from the standpoint of either civil defense information needs or the needs of the researcher in his attempt to achieve a comprehensive understanding of the post-attack world. The description of this conceptual framework and the fifty studies was completed in 1963 and was published as a 425 page research report under the title, "An Approach to the Study of Social and Psychological Effects of Nuclear Attack".

Since that time, our work has proceeded on three lines of effort simultaneously. First, continuation of the development of the analytic framework for the entire research area; second, inquiry into the methodological problems posed by research on possible post-attack phenomenon; and third, the conduct of a number of the specific studies defined in the report mentioned above.

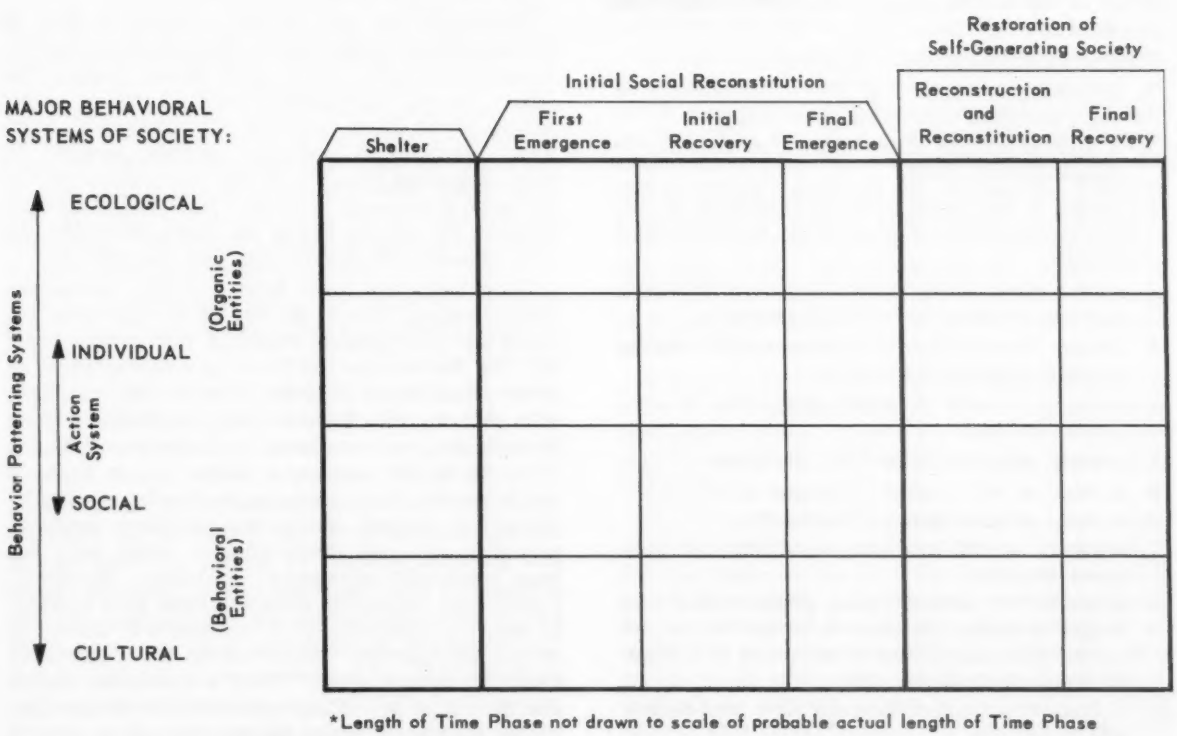
A number of the specific studies were undertaken as small pilot studies in order to determine whether more comprehensive research on the specific problem involved would be feasible or fruitful. On the basis of some of these pilot studies it was concluded that more extensive work at this time would not be likely to advance the state-of-knowledge, and on the basis of others, more comprehensive studies have subsequently been undertaken.

In addition to its programmatic character and the effort to develop a unified conceptual approach to it,

FIGURE 1

MATRIX FOR GENERATING RESEARCH STUDIES FROM PRESENT AND POSSIBLE CONTENT OF THE BEHAVIORAL SCIENCES

POST-ATTACK TIME PHASES:*



*Length of Time Phase not drawn to scale of probable actual length of Time Phase

four other characteristics of the perspective from which our work is being undertaken should be noted. First, it involves a *total society* point of view. This means that we are not only interested in identifying likely social and psychological effects; we want to be able to trace out the implications of these effects on recovery of the total society. Second, we take *societal recovery as the criterion* for evaluating the significance of various social and psychological effects and for judging the significance of their implication for civil defense policy formulation and planning purposes. Third, while we recognize that there may be other considerations relevant to the political desirability of general and specific civil defense actions, such considerations are defined as outside the scope of our research. Our perspective is concerned only with determining for any proposed civil defense activity, its estimated effect on recovery in the post-attack period. The fourth characteristic of our perspective is its purposive focus. We are asking the general question of what the probable social and psychological effects of an attack would be in order that better inferences can be drawn from these probable effects with respect to civil defense policy formulation and program planning.

Review of Studies

In this short paper, I can only note in passing some of the kinds of studies we have undertaken since the initial organizing effort in 1962. This brief review is intended only to provide an indication of the range and nature of the several studies from which conclusions presented later have been drawn.

These specific studies have included:

1. collection and review of behavioral research on individuals and groups in disaster situations.
2. a study of possible pressures for mass migration in post-attack situations.
3. studies of the demographic characteristics of surviving populations after a variety of hypothetical attacks.
4. studies of the institutions of the family and voluntary organizations in post-attack situations.
5. a study of competitive versus co-operative behavior in disaster and stress situations.
6. study of possible extremist movements in post-attack situations.
7. a study of leadership in crisis situations.
8. a study of role conflict in disaster situations.
9. a study of hostility toward authority.
10. study of special problems of children in post-attack situations.
11. a number of methodological studies which have sought to answer the question of how we can get supportable propositions about events in a hypothetical post-attack situation.
12. a study of consumer behavior in a post-nuclear attack situation.
13. a collection of studies of the dimensions of societal vulnerability to nuclear attack. In this collection of studies we have produced major papers with the following titles:
    (a) The Social Dimensions of Nuclear Attack,
    (b) Demographic Aspects of Vulnerability and Recuperation,
    (c) Local Government in U.S. and the U.S.S.R. under Stress: A comparative View of Some Political Administrative Dimensions of Nuclear Attack,
    (d) Societal Recovery After Nuclear War: The Economic Dimensions, and
    (e) Methodological Issues of the Social Analysis of Nuclear Attack and Recovery.

All of the studies drew upon a wide variety of source materials including:

1. field studies of groups and communities in natural and man-made disaster situations,
2. studies of behavior under stress,
3. eye-witness and historical accounts of disasters,
4. laboratory and simulation studies of individuals and groups under stress,
5. theoretical works on societal functioning and the likely impacts of major disturbance,
6. public opinion, attitude, and communication studies,
7. studies of the effects of nuclear weapons,
8. economic studies related to recovery,
9. civil defense literature of all descriptions.

Essentially, we were trying to create a pool of information about the behavior of individuals, groups, communities, and societies under known disaster conditions, in order to establish a basis for making propositions, about likely behavior in hypothetical, post-attack situations. As with any scientific question, we were proceeding from the known to the unknown, but we found it necessary to spend a great deal of effort to establish the known before we could undertake the more tenuous task of projecting into the unknown.

Since there has never been a major, nationwide, nuclear attack, there is no way of knowing what the social and psychological effects of such attack would be. The best we can do is try to combine what we know about human behavior under disaster conditions with what we infer the post-attack conditions will be. In doing this, we immediately encounter two obstacles. First, the needed data are available only in scattered and incomplete form, requiring much to be supplied by assumption. Second, certain new conditions would be present in the post-attack situation which have not been previously encountered in human experience. Facing these formidable obstacles, some have concluded that it is impossible, or, at best useless to attempt to answer the question "What will be the response of society to nuclear attack?" Such a conclusion implies that there is no way of making meaningful preparations for the post-attack period because there is no way of

knowing for what to prepare. In our work we have taken a different point of departure. In the research we have undertaken, we have aimed at generating hypotheses concerning post-attack phenomena based on inferences from the behavior of people under conditions which resemble, in whole or in part, the conditions of the post-attack situation. We believe there is considerable information relevant to the question; that it is possible to marshall that information for the purpose of making hypotheses; and that hypotheses based on systematic examination of available evidence are likely to be more accurate than hypotheses which ignore and are counter to such evidence.

Expected Post-Attack Behavior

With a subject so broad as mine, I can only attempt a general summary of some of what we think we have learned from this work. While a detailed review of the findings of all the studies mentioned cannot be presented here, I will attempt to outline the picture of man's response to disaster that begins to emerge from them.

In much of the early public dialogue concerning the behavior of survivors in a post-attack situation, two opposing images define the range of views expressed. One is the Hobbsian "war of all against all" where social norms collapse, and individuals suddenly become brutish, amoral, lawless, savage, and totally selfish, killing each other in competition for scarce resources. The opposing image is curiously devoid of reference to effects on individual motivations, perceptions, and behavior. It merely assumes man is rational, will remain rational after an attack, and will satisfactorily resolve the problems he faces. Neither image appears supported by citable evidence and neither contributes to our understanding of post-attack behavioral phenomena. The general picture that can be developed from the studies mentioned above lies between these extremes, is far less clear-cut, and leaves many questions yet unanswered. Still, it leads to quite different implications for recovery management than either of the more definitively stated extremes.

In constructing this picture, the statements we make are necessarily generalizations of what would appear to be true for most of the survivors. That the opposite would be true in specific instances for every generalization we make would undoubtedly be the case. Not only would situations differ across survivors, one would expect variation among responses of individuals exposed to the same situation. One is unable to deny, therefore, the possibility that some individuals would protect their own shelters by shooting neighbors who sought entrance. (This subject produced considerable headline controversy in the public media in the United States about two years ago.) Some undoubtedly would. But it is difficult to construct the situation in which the shooting of neighbors on a grand scale could be reasonably anticipated on the basis of what is known about human behavior. Our generalizations, therefore, must be understood as attempts to characterize modal expectations. It should also be noted that in the picture I'm about to present, I am talking about what we can expect to happen if an attack occurs and there is no special training, pre-attack preparations, or local civil defense organization.

There seems to be no evidence to suggest that the effects of an attack on the survivors would deprive them of their abilities to function mentally within normal ranges. There is little evidence that survivors would lack the motivation to continue to survive in the post-attack environment. Nor does it appear that the social norms by which people govern their relationships with other people would be suddenly abandoned. Past experience does not support the hypothesis that an attacked population would display widespread mass panic. The available evidence does not suggest that co-operative and adaptive behavior would be infrequently found among survivors.

The evidence from past experiences in disaster situations does support the expectation that survivors would endeavor to adapt to living in their altered environment; that extreme fear is likely to characterize their emotional state over a long period of time; and that their psychological state in the immediate aftermath of the attack would be passive, quiet, docile and responsive to positive direction. This state is likely to persist until the initial shock of the disaster wears off and objective conditions improve. Only later is a more active energy state expected in which hostility toward authorities may appear.

We can expect survivors' motivations to be dominated by extreme fear from the time they believe an attack is imminent until they understand the attack to be over. This feeling of fear would be intermingled with concern for the safety and well-being of one's self and immediate family. As the extreme fear produced by the attack subsides to a lower level, there are likely to appear strong motivations to learn the fate of one's immediate family and others who are important to one's self. Continuing fear of new disasters and feelings of generalized anxiety can be expected, together with grief over known personal losses.

Within a short time, diurnal biological demands will re-assert their salience, and will be accompanied by an increasingly strong concern for the continued safety and well-being of one's family and others important to one's self.

Associated with this sequence of motivational states would be certain characteristic behavior patterns. With the acceptance of the likely imminence of an attack, people would tend to act so as to provide protection for themselves and their families. Assuming there are meaningful protective actions for people to take, three factors would inhibit their taking them. First, warning may not be received, or not be believed if received. Second, appropriate behavior may not be known to the

individual, and third, protective action may be delayed in order to locate other family members. The inhibiting role of each of these three factors would depend upon the pre-attack training and experience of the public.

After the attack is over, survivors would try to seek information about the fate of family members from whom they are separated and information about the national and local situations. This behavior would continue until the information is obtained. After the immediate effects of the attack have subsided, and biological needs for food and water become salient again, one can expect most behavior to focus on the problem of supplying these needs for one's self and family. During the shelter period, this behavior would be constrained by what is available within the shelter and how its allocation and distribution is managed. Once the requirement for shelter passes, people would tend, individually in some cases, and in small emergent groups in others, to begin to comb the surrounding area for available foodstuffs and water. There would be a strong tendency for this behavior to continue unabated because the future supply is apt to be perceived as uncertain which fact would encourage people to continue to accumulate as large stores as possible until such time as the future resupply is perceived as certain. Continued survival would be dependent on continual supply and it is difficult to imagine the circumstances under which people, where no special measures have been instituted, would forsake accumulating foodstuffs in order to undertake other activities. This phenomenon is of overwhelming significance to post-attack recovery management planning.

To avoid any chance of being misunderstood, let me repeat my earlier caveat that these propositions about post-attack behavior refer to a situation in which no special training, pre-attack preparations, or local civil defense organization are assumed. In a sense, we are trying here to answer the question of what we can expect survivors to do in the event that no civil defense preparations have been undertaken prior to the attack except for the provision of shelter. By approaching the problem in this way, it is hoped that we can perceive better what civil defense measures need to be created. This approach leaves, as a separate question, what behavior we can expect of survivors *assuming* particular prior preparations and civil defense measures.

If we designate as *maintenance* activities those activities which serve the function of meeting basic needs from immediately available resources, we are saying that after initial responses to the attack itself, if appropriate prior preparations have not been made, one can expect survivors to engage primarily in maintenance activities. Maintenance activities consume available resources and do nothing to bring about future resupply. To the extent that the surviving population engages in maintenance activities to the exclusion of system regenerative activities, it is doomed to future starvation. For societal recovery to occur before subsistence resources in inventory are consumed, a considerable proportion of the survivors' activities must be devoted to non-maintenance recovery activities to an extent sufficient to establish the resupply capabilities of the total system.

The general problem this picture creates for recovery management is the discrepancy between what people will be *inclined to do* and what they *must do* if recovery is to occur. Societal recovery will require that they not restrict their efforts to maintenance activities alone, but will engage in necessary regenerative activities. A significant implication for the rcovery management system is that means must be found for satisfying maintenance needs while at the same time, motivating and directing the efforts of survivors in other critical recovery activities.

We had advanced the proposition that despite the personal terror, tragedy, and deprivation individuals may undergo, they are still likely to be psychologically capable of relatively normal behavior. We believe they are apt to display a desire to survive and will be inclined to participate in activity they believe instrumental to that end. Evidence which appears contradictory includes certain long-term psychological abnormalities noted among Hiroshima survivors as well as similar enduring psychological states observed in survivors of such disasters as the Coconut Grove fire. If such effects are observed in these comparatively minor disasters, would we not expect a far greater incidence in nuclear war? Not necessarily, because of the expected operation of the relative deprivation phenomena. The relative deprivation hypothesis is that, within some limits, an individual interprets his fate relative to the fate of others. If he alone suffers agonizing loss while all round him are unaffected, he is apt to respond differently than if he is one of many who have suffered similar loss, and there are many who have suffered greater. In the former instance, the deprived individual can afford to dramatize his misfortune by deviant behavior. In the latter case, all being in similar circumstances, there is little point in such behavior. If the circumstances of an individual's life are suddenly adversely altered, and not the circumstances of the group of which he is a part, the individual is confronted with the problem of continuing to adapt to the behavior norms and goals of the group despite the fact that all his former ways of adapting may no longer be appropriate. However, if the circumstances of all the members of the group are similarly adversely altered, the behavior norms and goals of the group can be expected to change accordingly. The proposition that the psychological functioning of survivors would be within normal ranges rests heavily on the relative deprivation hypothesis.

How, it is sometimes asked, could survivors possibly adjust to the shock of the event, to the sight of the dead and injured, to the loss of loved ones, to the knowledge of the staggering loss of human life, to the

idea of the awesome barbarity man has perpetrated against man, and to the drastically altered conditions of life? How could they possibly attempt to pick up the pieces and go on? By arraying such questions, the answer is often implied that they could not or they would not do so.

I think, however, that history suggests that they would. People, individually and collectively, have displayed a tenacious grasp on life and continued living. There is little evidence to support the hypothesis that in the event itself survivors would prefer death to continuation of the struggle.

For the society as a whole, the impact of a major nuclear attack is without close parallel in human history. For the individual, however, it is difficult to show the ways that situations and events produced by an attack would create any greater hardship and horror than individuals have frequently faced, endured, and adapted to in the past.

In summary, we have concluded that survivors would be psychologically capable of performing required recovery activities. Whether, or the extent to which, they would perform them can be seen to depend, in large measure, on the nature and effectiveness of the education and training experienced before the attack, the particular post-attack conditions existing locally, and the organizations and means employed to direct the survivors' activities toward required societal recovery activities.

Implications for Societal Recovery

These conclusions on the likely social and psychological effects of an attack are important because they permit us to refocus our inquiry on the problem of societal recovery. We have said that people will be capable of recovery activities. But can society recover? And on what would societal recovery depend?

In the literature on possible effects of nuclear attacks, the word *recovery* is frequently used in different and undefined ways. Sometimes it refers, quite generally to the ability of the society to return to some pre-existing or "normal" state. Sometimes, it has a highly specific referent as, for example, when Gross National Product or some such economic index is used to project recovery of the system. Alternatively, recovery has been taken to refer to the reconstruction of the polity, to the environmental conditions of living, or sometimes to the biological or psychological state of individuals. The occurrence of conflicting statements about recovery is not surprising in view of the different ways in which the term is used. In this paper, societal recovery is used in the most general and inclusive sense to refer to the over-all state of society.

A society is an organized population which interacts with and extracts from its environment the energy to maintain and perpetuate itself. Societies are organized in patterned ways to accomplish the basic functions of production, distribution and consumption. Members of a society are interrelated through kinship, formal and informal organizations, and through their relationships to a polity. Within a society, identifiable patterns of behavior evolve which reflect basic values and ideologies of the members. When we speak of the survival and recovery of a society, we refer not just to the people, but to their interrelationships, organization, institutions, values, and ideology as well. Mere continued survival of a population, therefore, does not constitute recovery of the society.

Neither does the concept of societal recovery assume a return of the social system to a previously existing state. It must be granted at the outset that a major nuclear attack would create a different world for the survivors, and that far into the future, under any circumstances, life would be a different matter than before the attack on almost any dimension one could name. The question is not one, therefore, of the possibilities of returning to what once was; it is rather a question of the possibilities of the continued survival of the essential elements of the society. Part of the problem is to identify what the essential elements are.

What then do we mean by societal recovery? I will attempt to provide a definition of the term by establishing a frame of reference from which societal recovery can be viewed as the achievement of a set of seven goals. The concept of a *recovery management system* offers an especially relevant frame of reference for considering societal recovery. By *recovery management system* we refer to an organization which has the responsibility for directing recovery activities within a society. We need a term which conveys the idea of the directing and controlling functions but does not prejudge the characteristics of the organization responsible for implementing these functions as might be the case if we referred instead to some specific existing agency such as the Office of Civil Defense or the Office of Emergency Planning.

By adopting the frame of reference of a recovery management system, attention is immediately focussed on the need for specifying its goals. If we delineate the goals of recovery management, it then becomes meaningful to consider what conditions must exist before, during, and after an attack in order for these goals to be achieved.

Recovery Goals

Postulating a set of societal recovery goals is an arbitrary exercise, in one sense, because there is nothing necessary about any goal specified; *recovery goals are what we decide we want them to be.* The set of recovery goals described below represents one attempt to identify a minimum number of characteristics of the total system state which would have to be satisfied for society to be *recovered.* It is not claimed that this set of goals is definitive and inclusive of all the elements

one may ultimately want included. Further consideration may well lead to additional goals and modifications of the ones stated. Hopefully, however, it is sufficient to provide a suitable point of departure for delineation of the societal recovery question.

Maximum Viability. By viability, we refer to the balance between the resources required by a population for maintenance and growth and the resources available to satisfy those requirements. Where available resources are insufficient to satisfy requirements, the population will decline and in the extreme case, die off completely. We restrict the meaning of viability to the ratio of required resources to existing resources and intend to imply nothing further about the social system. Continued survival of the population and the capacity for growth can be achieved only to the extent that available resources meet and exceed daily requirements of the population. Hence, maximum viability is identified as a key goal of a recovery management system.

Maximum Acceptability. The concept of acceptability is more difficult to define precisely and ultimately is definable only in terms of some consensus. While its specific content is debatable, this crucial aspect cannot be ignored in attempting to identify recovery goals. If the society is willing to risk nuclear war to preserve what it values, it would not make sense to omit from a statement of societal recovery goals the characteristics of the system so highly valued. Nor would it make sense to design a recovery management system oriented toward recreating a society in which these valued characteristics were not prominent elements.

Without undertaking the extended discussion this issue deserves, we will assume acceptability to include: an acceptable polity, minimum alteration of the pre-attack social system, and the preservation of basic values, ideology, and institutions. From the standpoint of a recovery management system, a critical goal is to achieve *viability* by means that are maximally *acceptable* to the society as a whole.

Continued Use of Pre-attack Technology. A society's technology is related not only to its productive capacity, but also to its forms of social organization. For a modern, industrialised society, failure to reinstitute pre-attack technology, especially with respect to communication, transportation, and production capabilities would result in decreased likelihood of achieving maximum viability on the one hand and preserving valued institutions and forms of social organization on the other. While the image of a collection of relatively isolated and self-sufficient rural enclaves of population is often invoked in discussions of post-attack recovery, it is argued here that not only is such a situation unlikely, but that it is not an appropriate goal for the recovery management system. The more appropriate goal is reconstitution of an urban-based, pluralistic, highly-interdependent and productive social system. Recovery efforts should aim, therefore, not at a return to older technologies, but toward the preservation and immediate reconstitution of existing technology.

Preservation of the Maximum Number of Lives. The goal has important implications for the recovery management system. In the first place, it places a high premium on the provision of protection for the population against the immediate effects of an attack. More important, though perhaps less obvious, is the emphasis it places on requirements for keeping the survivors alive after the initial effects of the attack have subsided and providing for the continued maintenance and growth of the surviving population. Extensive shelter facilities alone would tend to exacerbate the problem to the extent that they would result in a greater number of survivors relative to the surviving resources. This fact illuminates the requirement that recovery management must be dealt with as an integrated, long-range, comprehensive program or it cannot hope to come to terms with the problems it faces.

The goal of preserving the maximum number of lives possible will present crucial decision dilemmas in allocating resources in the post-attack period. To the extent that all survivors cannot be provided for, agonizing priorities must be established for allocating limited resources. Even in the best of situations, such decisions may have to be made, but the more effective the recovery management system, the fewer such decisions would be.

Minimum Threats to Legitimate Authority. One of the desirable characteristics of the recovered society is a stable polity not threatened by coup or takeover from either inside or outside the society. Coupled with the acceptability goal, this means a government which is both acceptable and strong.

Maximum Ability to Cope with Emergent Situations. While preplanning and contingency planning are obvious prerequisites of successful recovery management, we can be relatively certain that no matter how much prior planning is undertaken, in the event itself, the situation will differ from the one assumed by the plan and there will be need for rapid adaptation. There is little to argue against the proposition that the post-attack society will be confronted repeatedly by unforeseen situations and to survive, it must have the capability for rapid adaptive response.

No Alterations in the Environment Precluding Achievement of Any of the Goals Identified Above. This goal is easily taken for granted, but is important to state because of its pervasive significance to the entire recovery management process.

In our studies of the likely social and psychological effects of a nuclear attack, we adopted societal recov-

ery as the appropriate criterion for evaluating the importance of various phenomena and for judging the importance of their implications for civil defense policy formulation and program planning purposes. To be useful, however, the gross concept of societal recovery, while intuitively meaningful, had to be more clearly delineated. The set of seven goals just advanced, constitutes an attempt to take at least one significant step toward a precise definition of the concept. We must go much further, but even at the present level of definition, we believe we are developing more useful means of analyzing the general question of societal recovery into its constituent parts. In doing so, we think we are able to decompose this staggeringly complex question into specific component questions, the answers to which lie within reach of the relevant scientific disciplines. To the extent that this is true, we are not engaging in idle theoretical exercises.

Specifying the several goals of a hypothetical recovery management system, allows us to take an additional analytic step we could not take before. Given the set of goals, it becomes meaningful to work backwards in time and ask what conditions must exist in order for each goal to be achieved. If the immediately preceding necessary conditions can be described, the step can be repeated. By continuing this process, some should be able to work backwards in time from the end-results to pre-attack conditions.

I call this approach *recovery oriented* as opposed to the approach we began with some five years ago which I call *attack-oriented*. The contrast between the recovery oriented and the attack-oriented approach to the study of post-attack phenomena is worth noting from the standpoint of their respective implications for the strategy of a programmatic research effort intended to provide information for more effective civil defense planning. The attack-oriented approach begins with the attack and involves the attempt to project forward in time. In the recovery-oriented approach, the desired end-state is first defined and the analysis proceeds backwards, in hypothetical future-time, in the attempt to identify what conditions must exist for the system to reach the desired end-state. The difference is a crucial one. The former is essentially open-ended and has a difficult time producing solid information on which to base civil defense planning. The latter focusses at each step on the specific conditions which must exist for recovery to occur. Each condition identified can be studied independently and information on each condition from many different sources can be systematically accumulated. From a research strategy standpoint, therefore, the recovery-oriented approach is far more likely to be efficient in producing information relevant to policy formulation and program planning. The point, I think, is important because, in general far too little attention has been given to defining recovery goals, with the result that too few researchable questions about post-attack events have been formulated.

Our experience has been that the more we can learn about possible post-attack phenomena involving the behavior of people, the more impelling has become the necessity for specifying societal recovery goals in order to impose structure on the information being developed and to evaluate its significance for civil defense purposes.

I should like to conclude my remarks with a few generalizations which I believe are warranted on the basis of our studies to date. For a range of attack possibilities, there is a reasonable likelihood that sufficient "raw material" of societal recovery—people and resources—would exist in the immediate post-attack period. Survivors in general will be motivated to engage in individual maintenance activities, and hardly at all in system regenerative activities. However, societal recovery would depend on the successful reconstitution of production capabilities before available inventories of critical resources are consumed. Failure in this requirement would result in a new set of disaster conditions. Success would also depend upon the ability of the recovery management system to motivate survivors to engage in sufficient system regenerative activities to restart production before inventory is consumed. If societal recovery fails, it is most likely to fail because of the inability of the recovery management system to utilize the surviving people and resources to accomplish the tasks on which recovery depends. ▲

(*Continued from page 12*)

Most men everywhere yearn for peace. But no easy path leads to peace in a world torn by revolutionary turmoil which divides men against men, and man against himself. Time is needed, perhaps time most of all, for the passions of intolerance to subside and for the memories of past tragedies to be forgotten. And a great deal of energy is needed, and even more patience, perhaps patience above all, to move our nations and the world toward a better future.

There are grave risks along the slow and difficult trail toward the fulfillment of man's highest aspirations. We must have the wisdom to learn to cope with the man-made dangers at least as well as we can handle the hazards of an essentially hostile nature. Being prepared for the worst, we cannot afford to lose sight of the purposes of it all: to help build a world in which all the measures we are taking and yet will take against the threat of war can come to be viewed, in the future, with some amusement only as an outrageous but necessary waste in which mankind was engaged before it could find itself. ▲

CIVIL DEFENCE

Extracted from the United Kingdom House of Commons Official Report, Wednesday, 14th December, 1966 (Cols. 458-463)

The Secretary of State for the Home Department (Mr. Roy Jenkins): With permission, Mr. Speaker, I would like to make a statement about civil defence, and particularly about the future of the Civil Defence Corps.

After consultation with the local authority associations, my right hon. Friend the Secretary of State for Scotland and I have decided that the Civil Defence Corps should be reorganised and substantially reduced in numbers.

The future role of the Corps will be to help the local authorities to man the control system, which is the system of government in emergency; and to provide limited numbers of specialists to help to organise the first aid and welfare resources of the community.

We are greatly indebted to the members of the Corps. Their new role will be of great importance, and there will be a continuing need to attract people of high calibre, with qualities of leadership.

The local authorities have expressed their general willingness to co-operate in reorganisation and we shall be issuing comprehensive guidance after further consultation with them and with the voluntary organisations. Under the new scheme, which will be adaptable to local circumstances, local authority employees and the voluntary organisations will be asked to play a bigger part. After a period of adjustment, the active strength of the Corps is likely to be 75,000 to 80,000 compared with about 122,000 at present.

As I said in a statement to the House on 2nd February, there is a limit to what we can afford by way of insurance against the risk of nuclear war. Exchequer expenditure on civil defence has been reduced to about £19.7 million during the current year and a further saving of over £1 million needs to be made in 1967-68. We shall be discussing with the local authority associations how this saving can best be obtained, both from reorganisation of the Corps and in the remainder of the civil defence field.

The Government believe that by carrying out the measures I have indicated they will retain on the most economical basis a pattern of civil defence preparations which, if there were a nuclear attack on this country, would enable many millions of lives to be saved.

Mr. Sharples: Is the right hon. Gentleman aware that he has made an important statement, which civil defence workers have been awaiting ever since 29th July, 1965, when it was originally forecast by his right hon. Friend the Secretary of State for Defence? Can the right hon. Gentleman say what arrangements will be made for repayment to local authorities in respect of work which local authority employees will now be called upon to do, and which was formerly undertaken by volunteers?

Is the right hon. Gentleman aware that we shall probably wish to debate this matter, but, in the meantime, is he aware that, for a comparatively small saving, in the opinion of many civil defence workers he is virtually destroying an organisation which has rendered great service to the nation both in peace and war.

Mr. Jenkins: I totally reject the latter part of the hon. Gentleman's statement. I think that it is extremely important at the present time that we should reorganise and streamline the corps so that it does its job efficiently—it is bound to be a limited job—and that we get full value for money. I believe that this is precisely what we are doing and I am very glad—and I believe that we have the general support of the House in this—that we have made substantial reductions.

We have brought the budget down from £24.1 million in 1964-65 to £19.7 million for the current financial year, and we hope to get it down to £18.5 million in the future. I think that in the circumstances that is a right and proper thing to do from the point of view of allocation of national expenditure.

My reply to the specific first question which the hon. Gentleman asked me is that I am having consultations with my right hon. Friend the Chancellor of the Exchequer on this matter, and guidance will be given to local authorities.

Mr. Emrys Hughes: Is my right hon. Friend aware that Scotland is now in the greatest danger because of the development of the Polaris base and the increased development and the possibilities of atomic attack? Does his statement mean that as the country gets more dangerous the less expenditure there will be on civil defence? Does it not show that the Government realise the futility of civil defence when there are bases like that in West Scotland?

Mr. Jenkins: I do not entirely agree with my hon. Friend's stategic appraisals, though I listened to them with great interest. What this means is that the Government believe in getting value for money, and I think that we are doing that. I think that it would be wrong to spend too much and that it would also be wrong to abolish completely an organisation which gives us some re-insurance if an improbable but horrible event were to occur.

Mr. Lubbock: Is the right hon. Gentleman aware that many people would disagree most emphatically with his assertion that millions of lives could be saved by the Civil Defence Corps in the event of a nuclear

war, but that we on this bench nevertheless believe that it has a useful function to perform in assisting the authorities in civil disasters?

Can the right hon. Gentleman say whether the £1 million reduction in expenditure in 1967-68 is related to the strength of the Corps of 75,000 to 80,000, or is that merely an interim reduction which may be increased later?

Mr. Jenkins: That is an interim position. We shall cut the costs to £19.7 million in this financial year, but when we get the Corps reorganized on new lines we shall have a further saving of nearly £1 million.

Mr. Driberg: Does my right hon. Friend recall the Conservative Government's Defence White Paper in which it was stated that there could be no defence at all against a major nuclear attack, and does he intend to go on spending as much as £20 million a year on providing against what the hon. Member for Orpington (Mr. Lubbock) called civil disasters?

Mr. Jenkins: We propose to spend somewhat less than £20 million a year. The civil disaster aspect of the matter cannot be ignored.

Mr. Driberg: Leave it to the W.V.S.

Mr. Jenkins: As I have told the House previously, there is not suggestion and no thought in my mind that civil defence can possibly protect the country against the main disaster of a nuclear attack. But should such an event occur, it could limit the consequences and I do not think that it would be right to provide no resources of this sort in the unlikely event of such a disaster occurring.

Sir D. Reaton: Bearing in mind that the cost of civil defence has been reduced by the Government by about 20 per cent over the last three financial years and that another £1 million reduction is to take place at once and that in answer to the hon. Member for Orpington (Mr. Lubbock) the right hon. Gentleman has said that further reductions are to be made, how can the Home Secretary say that there has been no change in policy?

Secondly, bearing in mind the Government's immediate objective of saving nearly £1 million, why are the valuable services of 60,000 splendid volunteers to be dispensed with and wasted?

Mr. Jenkins: I have not said that there has been no change of policy. There has been a reappraisal, and we believe that the job can be done effectively by this very much more streamlined, organisation. I do not accept the view that to decide that one can save manpower in this way means that one is wasting the services of people concerned. It is essential from all points of view that we do the jobs that can be done with the smallest number of men who can do them effectively.

The right hon. and learned Gentleman commented on my reply to the hon. Member for Orpington (Mr. Lubbock). I was not indicating a further continuing change. I had already said that we would come down to £19.7 million in 1966-67 and that as a result of the policy, I have announced this afternoon we would come down to £18.5 million in the financial year beyond that.

Mr. W. Baxter: On what authority, scientific and otherwise, does my right hon. Friend base his assumptions that the Civil Defence Corps would in any way be useful in a nuclear war, because, as far as I can understand, and as far as most people are led to believe, it would be quite impossible to save any part of our community in the event of a nuclear war? I recognise, as, I hope, my right hon. Friend does, that the civil defence organisation can play a useful part in peacetime, in a national emergency or disaster. But is this the type of organisation we want to establish for this particular purpose?

Mr. Jenkins: All the evidence before us suggests that a fairly small insurance premium of this sort is worth paying. It does not for a moment suggest that this means that we could contemplate a nuclear attack without the most horrific consequences. But by maintaining such an organization we could somewhat limit those consequences. In these circumstances, I think that it would be wrong for a Government not to do this.

Several Hon. Members rose.

Mr. Speaker: Order.

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